Amendments to the Drawings:

The drawing sheets attached in connection with the above-identified application containing Figures 1-23 are being presented as a new formal drawing sheets to be substituted for the previously submitted drawing sheets. The drawing Figures have been amended. Appended to this amendment are annotated copies of the previous drawing sheets which have been marked to show changes presented in the replacement sheets of the drawings.

The specific changes which have been made to the figures are:

Figures 1a, 1b – remove text from those figures after Figure 1.

Figure 2 – remove text from that figure after FIG. 2;

Figure 3a – add labels for each of the elements shown in that figure;

Figure 4 – remove text from that figure after FIG. 4;

Figure 5 – update figure to more clearly show features in printed circuit board, and remove text from that figure after FIG. 5;

Figure 6 – remove text from that figure after FIG. 6;

Figure 7 – remove text from that figure after FIG. 7;

Figure 8 – remove text from that figure after FIG. 8;

Figure 9 – update figure to more clearly show features of the drawings, and remove text from that figure outside of the drawings;

Figure 10 – remove text from that figure after FIG. 10;

Figure 11 – remove text from that figure after FIG. 11;

Figure 19 – provide FIG. 19 label closer to that figure;

Figures 20a, 20b – provide labels closer to those figures, and remove text from those figures after FIG. 20;

Figure 21 – remove text from that figure after FIG. 21;

Figure 23 – remove text from that figure after FIG. 23.

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of Claims:

No claims are currently being cancelled.

Claims 1, 21, 26, 36, 41 and 44 are currently being amended.

No claims are currently being added.

This amendment amends claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-49 are pending in this application.

Objection to Drawings:

In the Office Action, the drawings were objected to because of various informalities noted on pages 2 and 3 of the Office Action. By way of this amendment and reply, formal drawing sheets are being submitted, whereby these formal drawing sheets are believed to address all of the informalities noted on pages 2 and 3 of the Office Action. Also, the specification has been amended to include text from the original drawings that was considered to be "descriptive material."

Objection to Abstract:

In the Office Action, the Abstract was objected to because of informalities on lines 4 and 6 of the Abstract. By way of this amendment and reply, a new Abstract is being submitted for the Examiner's consideration.

Claim Rejections – Prior Art:

In the Office Action, claims 1-3, 8, 9, 12, 17-20 and 44-46 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,198,394 to Jacobsen et al.; claims 1, 2 and 8-10 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,738,671 to Christophersom et al.; claims 6, 7, 11, 13-16 and 21-35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jacobsen et al. in view of U.S. Patent No. 6,560,471 to Heller et al.; claims 36-41, 43, 47 and 48 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jacobsen et al. in view of U.S. Patent No. 6,553,336 to Johnson et al.; and claim 42 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Jacobsen et al. in view of Johnson and further in view of Heller et al. These rejections are traversed with respect to the presently pending claims, for at least the reasons given below.

Presently pending independent claim 1 has been amended to recite a pneumatic pump system that provides vapor to the two or more sensor devices to cause the two or more sensor devices to continuously be in an operative state,

wherein the processing module comprises:

a digital signal processing unit that receives and processes signals output from the two or more sensor devices; and

a memory that stores the signals processed by the digital signal processing unit.

Such features as currently recited in claim 1 are not disclosed or suggested by Jacobsen et al., or by any of the other cited art of record. Presently pending independent claims 36 and 44 have been amended in a similar manner as claim 1, and thus those claims are also believed to patentably distinguish over the cited art of record.

Presently pending independent claim 21 has been amended to recite a power management system configured to operate the sensor device in one of a low power sleep mode and a high power operative mode, wherein the low power sleep mode is enabled for at least 70% of the time that the sensor device is operating,

wherein, during the low power operative mode, the digital signal processor is woken up periodically by a wakeup signal output by the power management system to thereby cause the sensor device to enter the high power operative mode, wherein during the high

power operative mode the digital signal processor scans the one or more sensors and determines whether or not an event has occurred or is occurring, and wherein the digital signal processor goes back to an inoperative sleep state and thereby causes the sensor device to reenter the low power operative mode when the digital signal processor determines that an event has not occurred or is not occurring.

Such power savings features are not disclosed, taught or suggested by any of the cited art of record. Claims 26 and 41 have been amended in a similar manner as claim 21, and thus those claims are also believed to patentably distinguish over the cited art of record.

The presently pending dependent claims are patentable due to their respective dependencies on one of the presently pending independent claims discussed above, as well as for the specific features recited in those dependent claims.

Conclusion:

Since all of the issues raised in the Office Action have been addressed in this Amendment and Reply, Applicants believe that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date June 30, 2005

By Phillip J. Articola

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (202) 672-5535
Facsimile: (202) 672-5399

Phillip J. Articola
Attorney for Applicant
Registration No. 38,819

NON-SPECIFIC SENSOR ARRAY DETECTOR
Inventor(s): Gregory STEINTHAL et al.
Appl. No.: 10/624,194

Fig. 1A

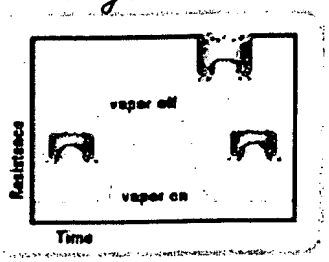

Fig. 1B

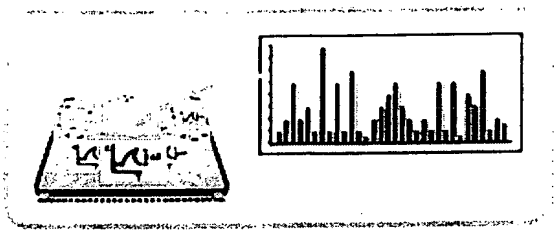

Figure 1. A) A representation of the composite detector material responding during an analyte exposure. B) A representation of how data are converted into response patterns.

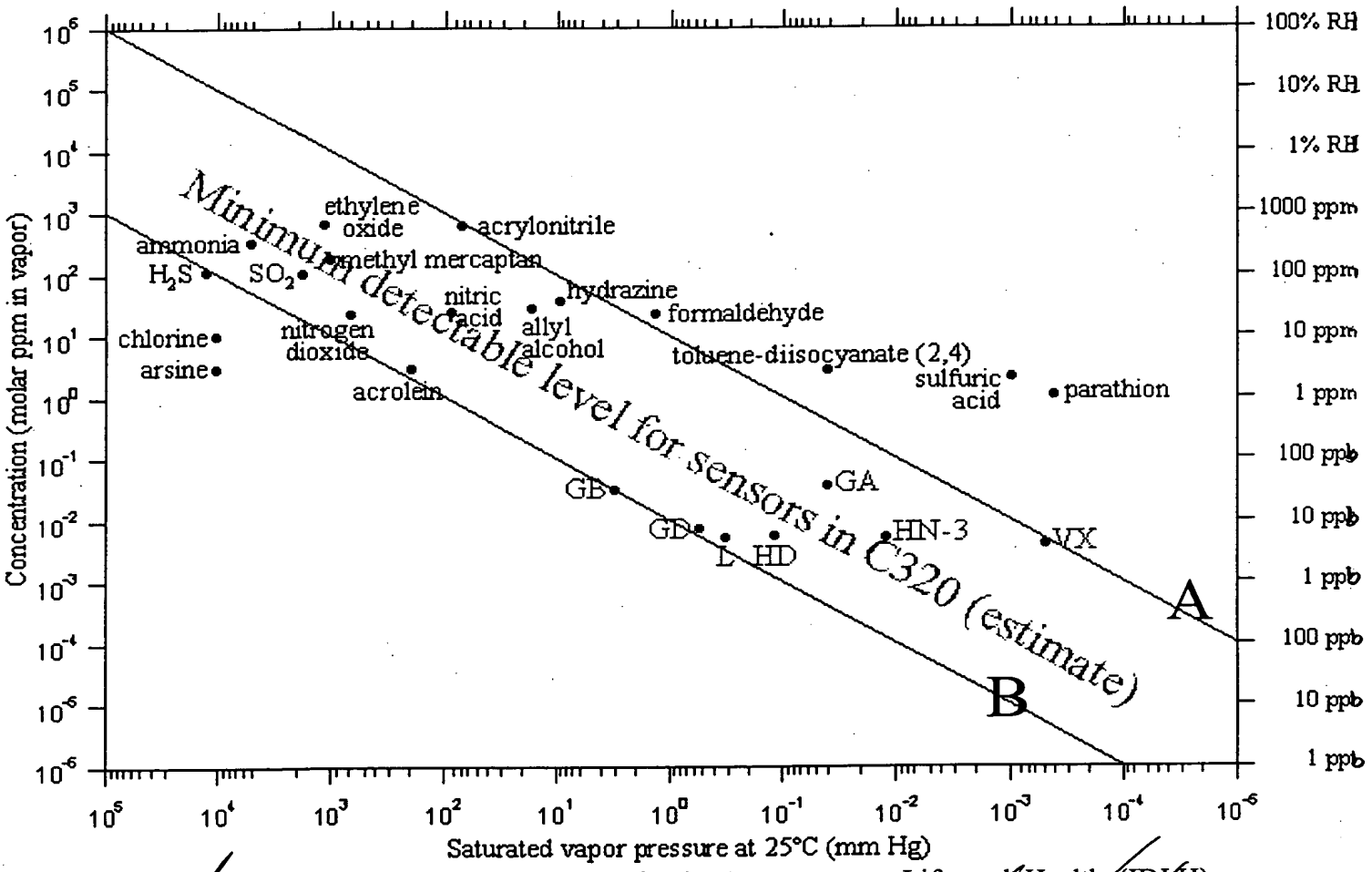

FIG. 2. Points use concentrations of Immediately Dangerous to Life and Health (IDLH) levels. Chemical warfare agents (red) and toxic industrial chemicals (blue) are shown. Chemicals with points above the region for the minimum detectable level have high probability of being detected by the sensor array in the Cyranose 320 at IDLH levels. Chemicals having points within the region have a moderate probability of being detected at IDLH levels. Chemicals having points below the region have a low probability of being detected at IDLH levels.

Tit[redacted]ON-SPECIFIC SENSOR ARRAY DETECTORS
Inventor(s): Gregory STEINTHAL et al.
Appl. No.: 10/624,194

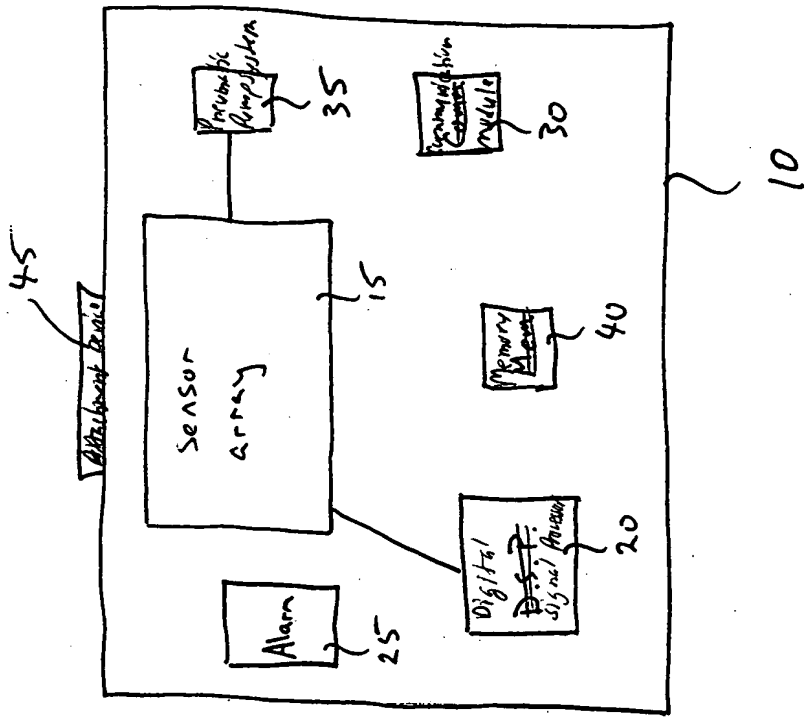

Figure 3a

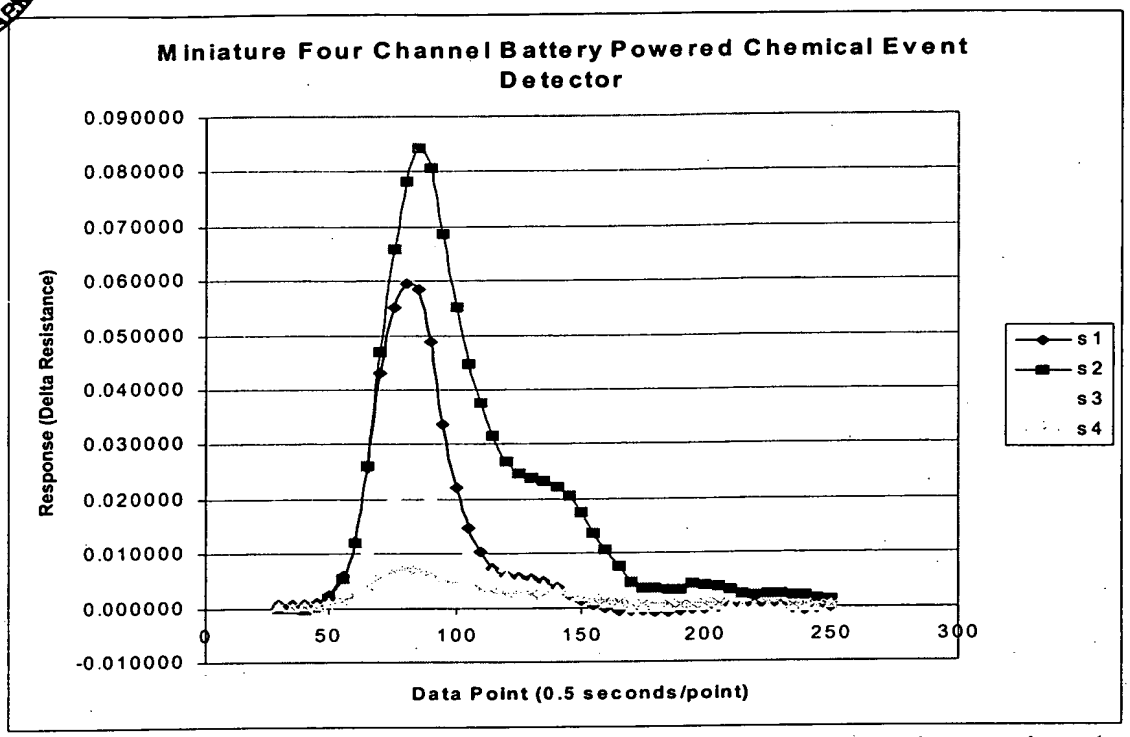

FIG. 4. Typical response curve when a four-channel chemical-event detector is exposed to a transient chemical response.

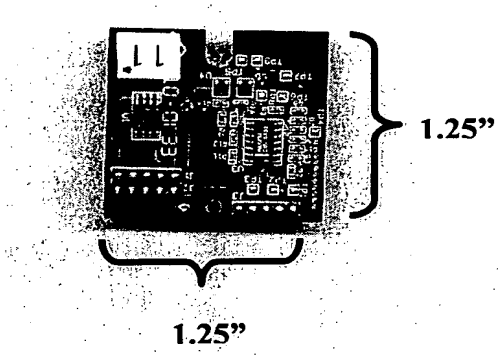

FIG. 5. Four-channel chemical-event detector.

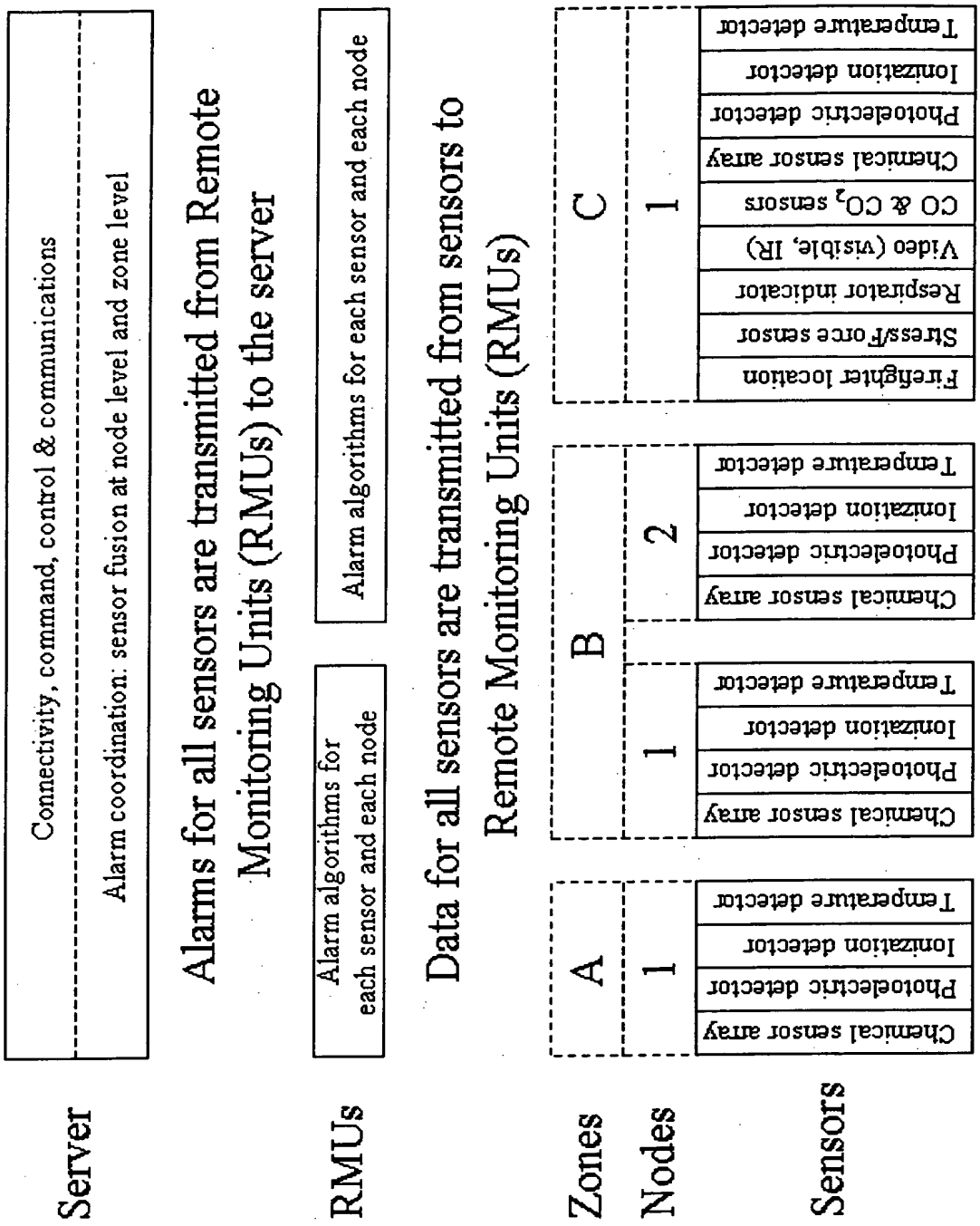

FIG. 6. System architecture for fire detection system. Nodes are defined as a collection of sensors/detectors at a single physical location. Zones are defined by physical relationships between nodes. This multi-level architecture for data analysis makes the system both flexible and scalable.

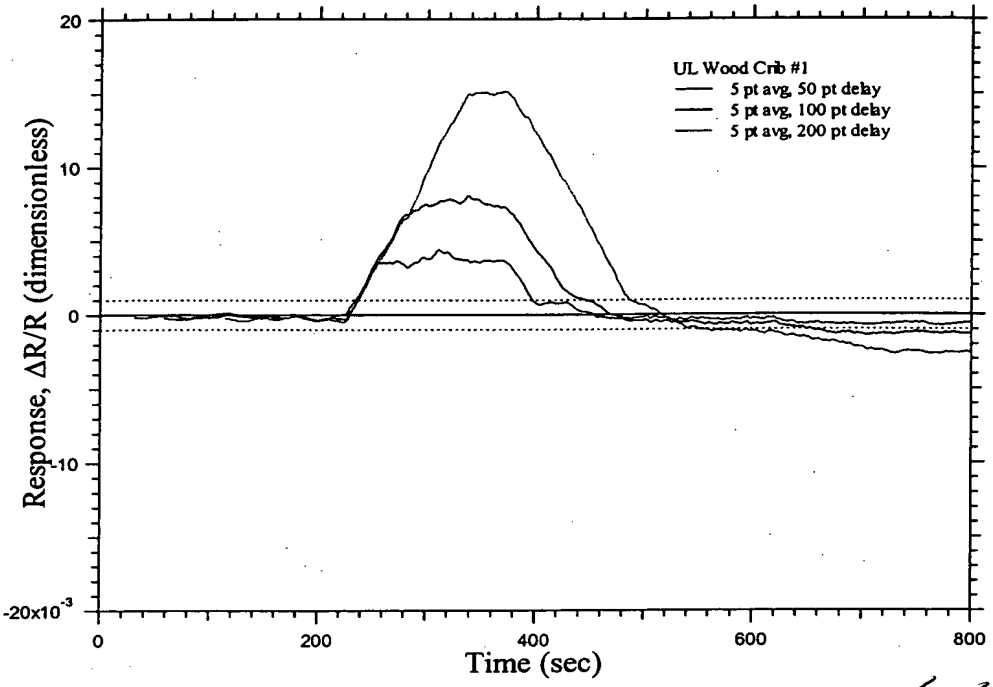

FIG. 7. Response as a function of time for the UL Wood Crib #1 fire. There is a significant difference in the magnitude of the response for different size buffers.

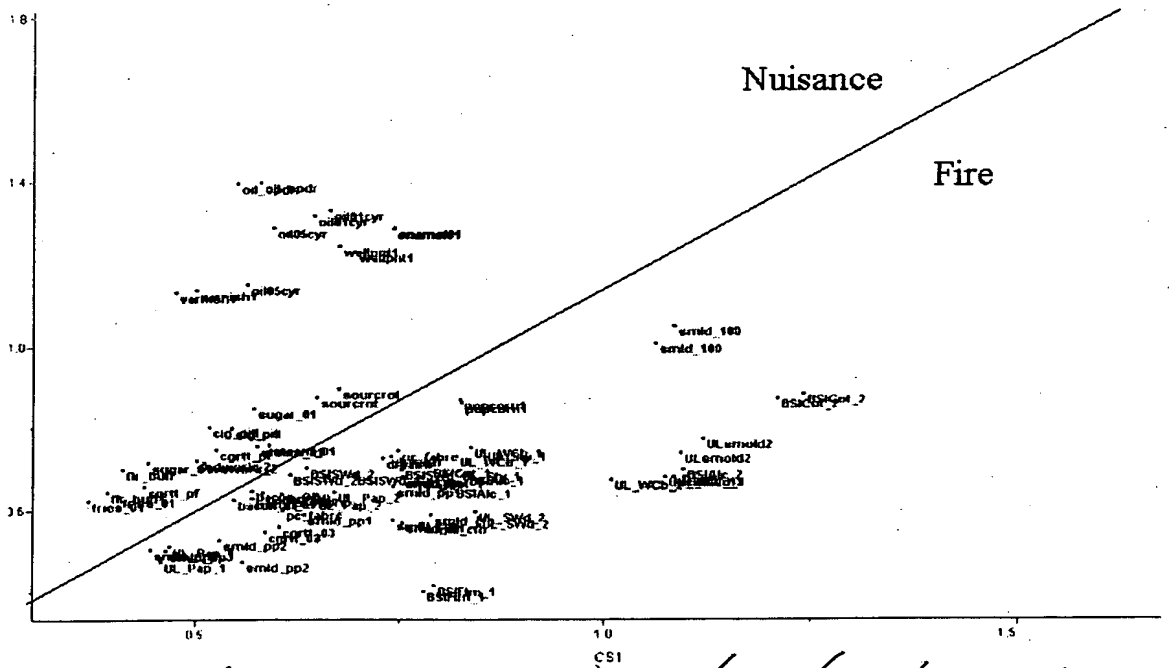

FIG. 8. The results for a Soft Independent Modeling of Class Analogy (SIMCA) model for fire (red) and nuisance tests (blue) that exceed the positive detection threshold. The line separating these two regions was drawn to minimize the number of false negatives---the case where the actual event is a fire but no alarm is sounded.

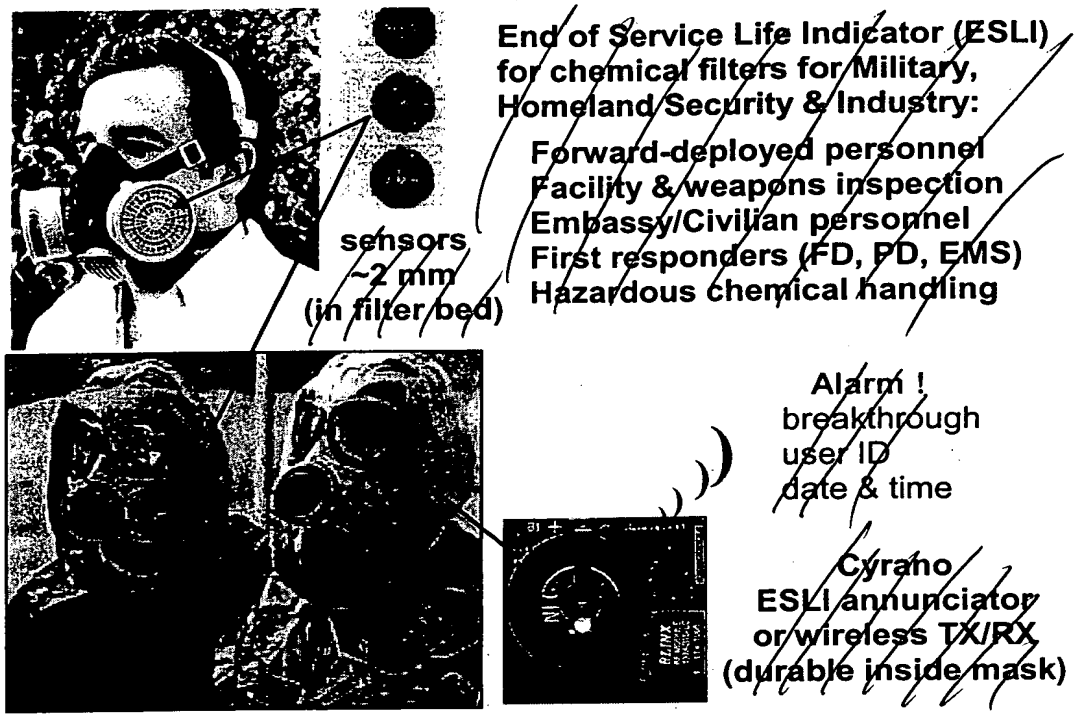

FIG. 9

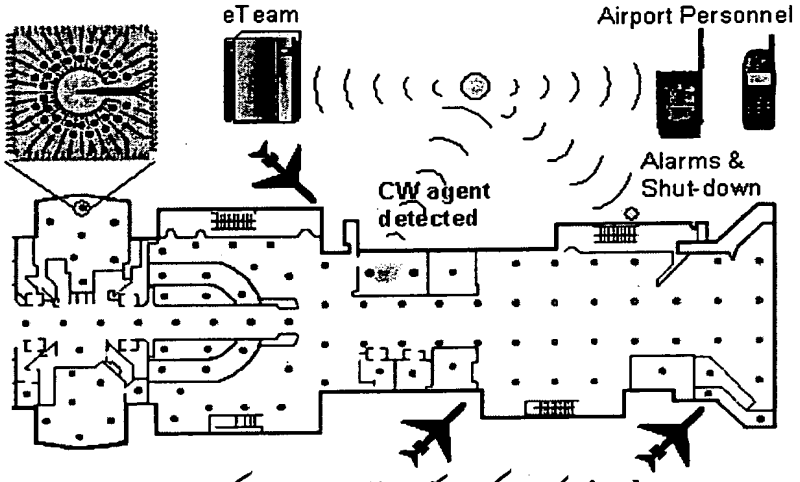

FIG. 10: Remote detection and notification in airport terminals.

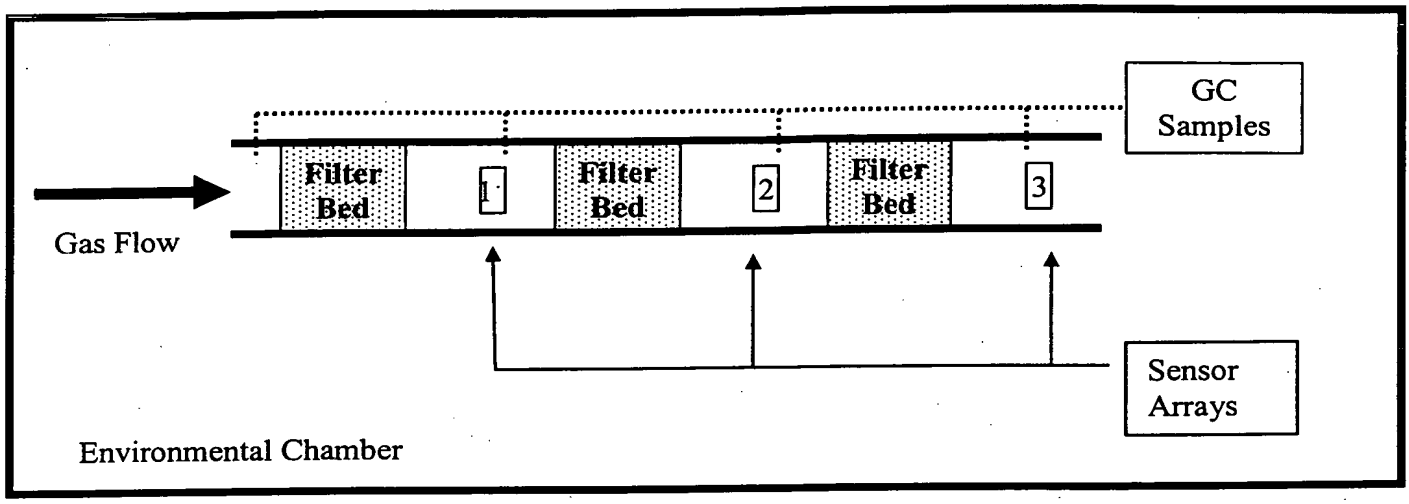

FIG. 11: Schematic Representation of Residual Life Indicator Fixture

Fig. 19

Sample #	Treatment	Solvents	Particle Size nm
6537-57b	Poly(isobutylene) on BP700	Isopar G	150
8847-9a	Polypropylene glycol on BP700	Xylene	180
6537-40	Poly(acrylic ester) on BP700	Ethanol	210
6537-51	Poly(acrylic acid) on BP700	water	210

FIG. 19

Fig. 20 (a)

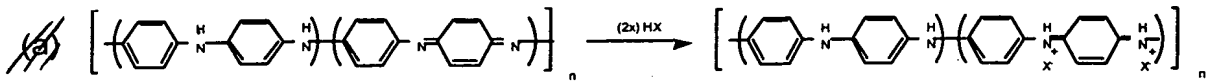

Fig. 20 (b)

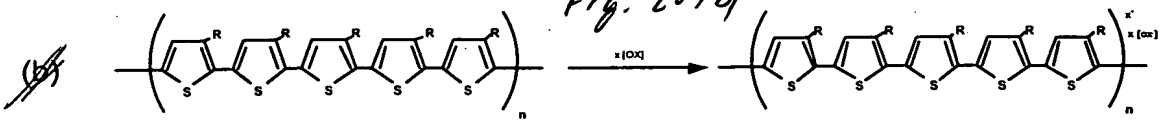

FIG. 20. (a) Chemical structure of polyaniline in its insulating state and its conducting state (following protonation by an acid, HX); (b) chemical structure of poly(3-substituted-thiophene) where R = H, or alkyl, [OX] = oxidizing agent, in its insulating state and its conducting state (following oxidative "doping").

Fig. 21

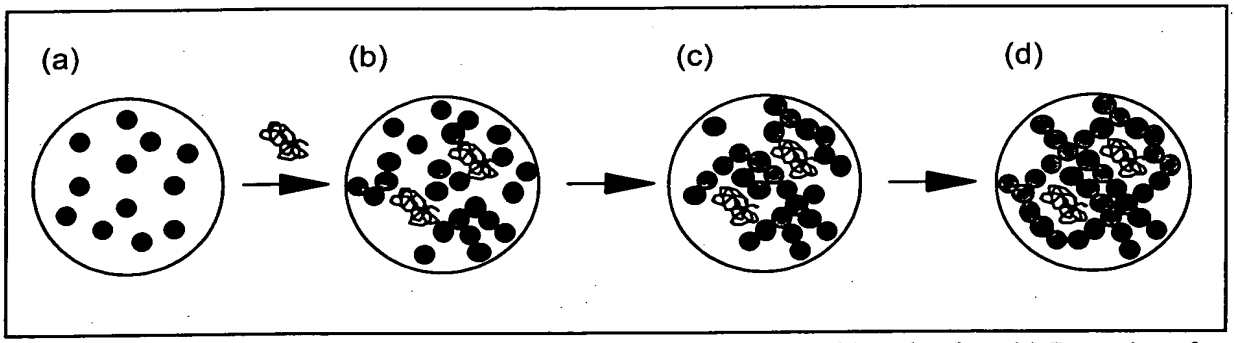

FIG. 21. Schematic diagram of the sol-gel encapsulation of indicator biomolecules. (a) Formation of sol particles during initial hydrolysis and polycondensation. (b) Addition of indicator biomolecule to the sol. (c) The growing silicate network begins to trap the biomolecules. (d) The indicator biomolecules are immobilized in the gel.

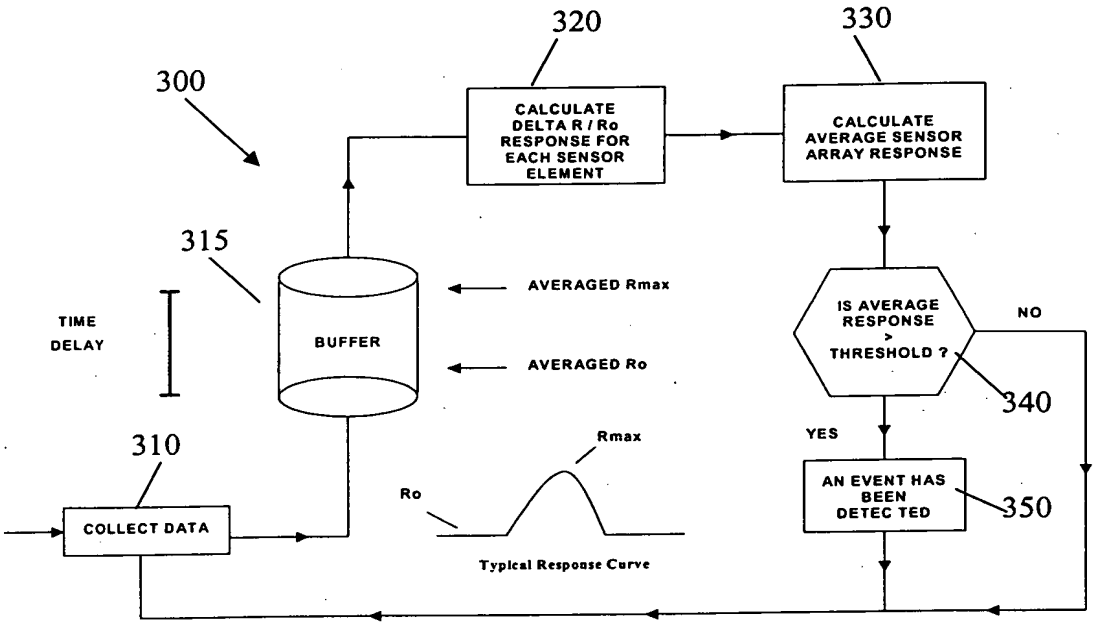

FIG. 23: BLOCK DIAGRAM OF FIRE DETECTION ALGORITHM & TYPICAL SENSOR RESPONSE CURVE